

A photograph of a community compost drop-off station. In the foreground, a large green and yellow bin is labeled "Community Compost Drop-Off" with a green recycling symbol. In the background, three people are standing near a black composting machine. One person is wearing a yellow shirt, another a light blue tank top, and a third a blue t-shirt and khaki shorts. The scene is outdoors on a paved area with buildings and trees in the distance.

Community
Compost
Drop-Off

**Moving towards Zero-Waste;
Integrating composting
into your home,
business,
institution,
& local municipal solid waste
plans and programs.**

**Every community has a choice,
we can have this....**



or we can have this



and this



and this



composting is a positive alternative
to landfilling or waste incineration

Compost:
natural process with which we interfere
manipulate by creating an optimum organic mass
at optimum carbon nitrogen ratio, surface area,
moisture; oxygen; to compress time;
create something useful and intrinsically understandable
once the public see it –they get it- then they want it

- Composting can be everywhere at every scale and level
- it is hands on (and hands in)



Composting in Maine-2010

- New rules- chapter 410; encourages new facilities
- Most colleges and universities have programs
- Several restaurants and resorts
- York County- private collection service being offered to area restaurants
- Over 90 municipal leaf and yard programs
- Many regional municipal composting facilities
- None have made the move beyond leaf and yard
- Several private facilities currently licensed for food waste
- Big plans for public/private partnership in Portland area
- Riverside Disposal Hallowell initiative
- Maine Compost School has permanent home
- 1 pilot project resulting in an ongoing operation (SRRA)

questions that need an answer

How will it fit with what you are currently doing?

What is the existing infrastructure-
what are the potential infrastructure needs- do they match?

What will be the scale of the program?

1. Who will it serve (generators/source)
2. What organics are out there

Space

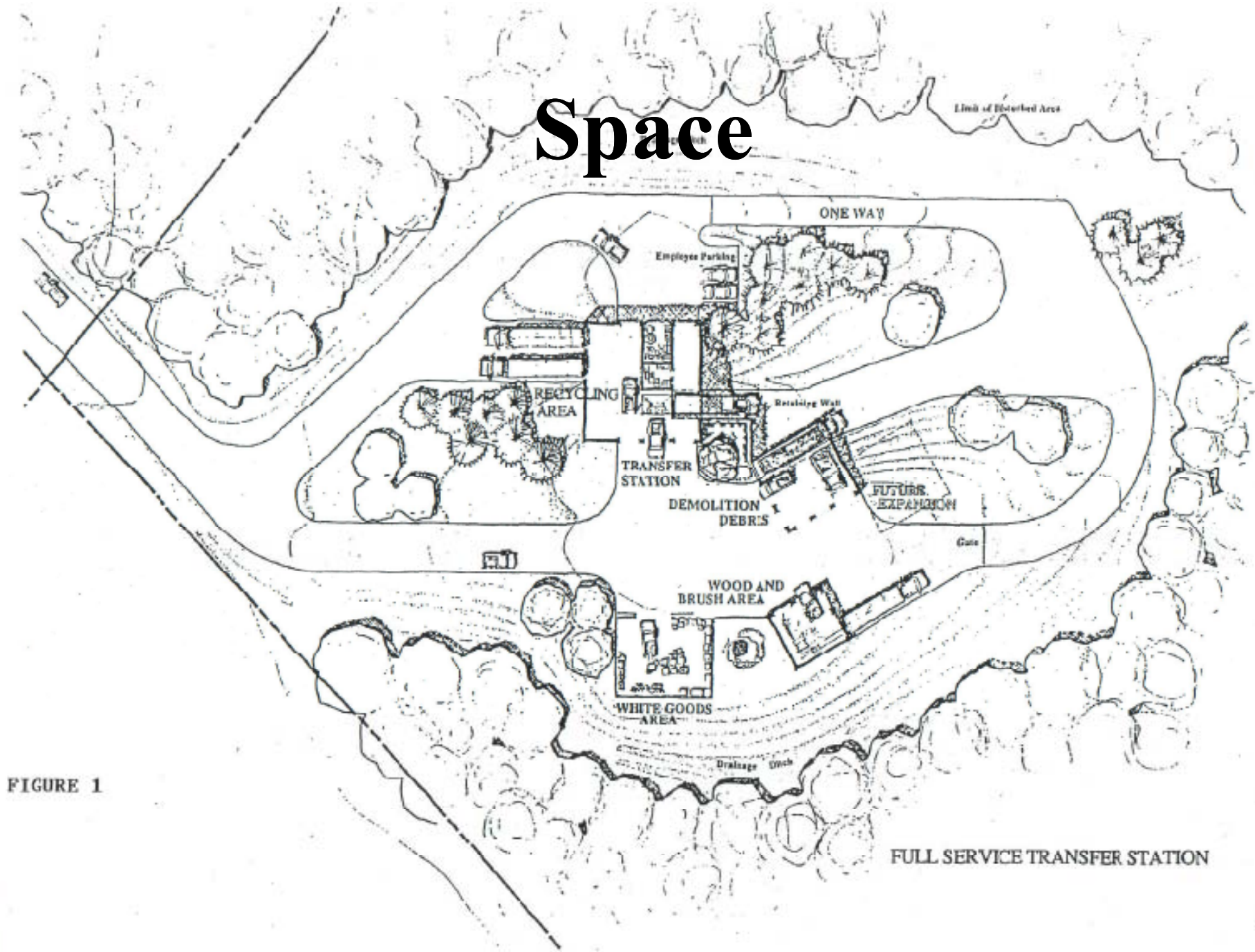


FIGURE 1

FULL SERVICE TRANSFER STATION

Equipment



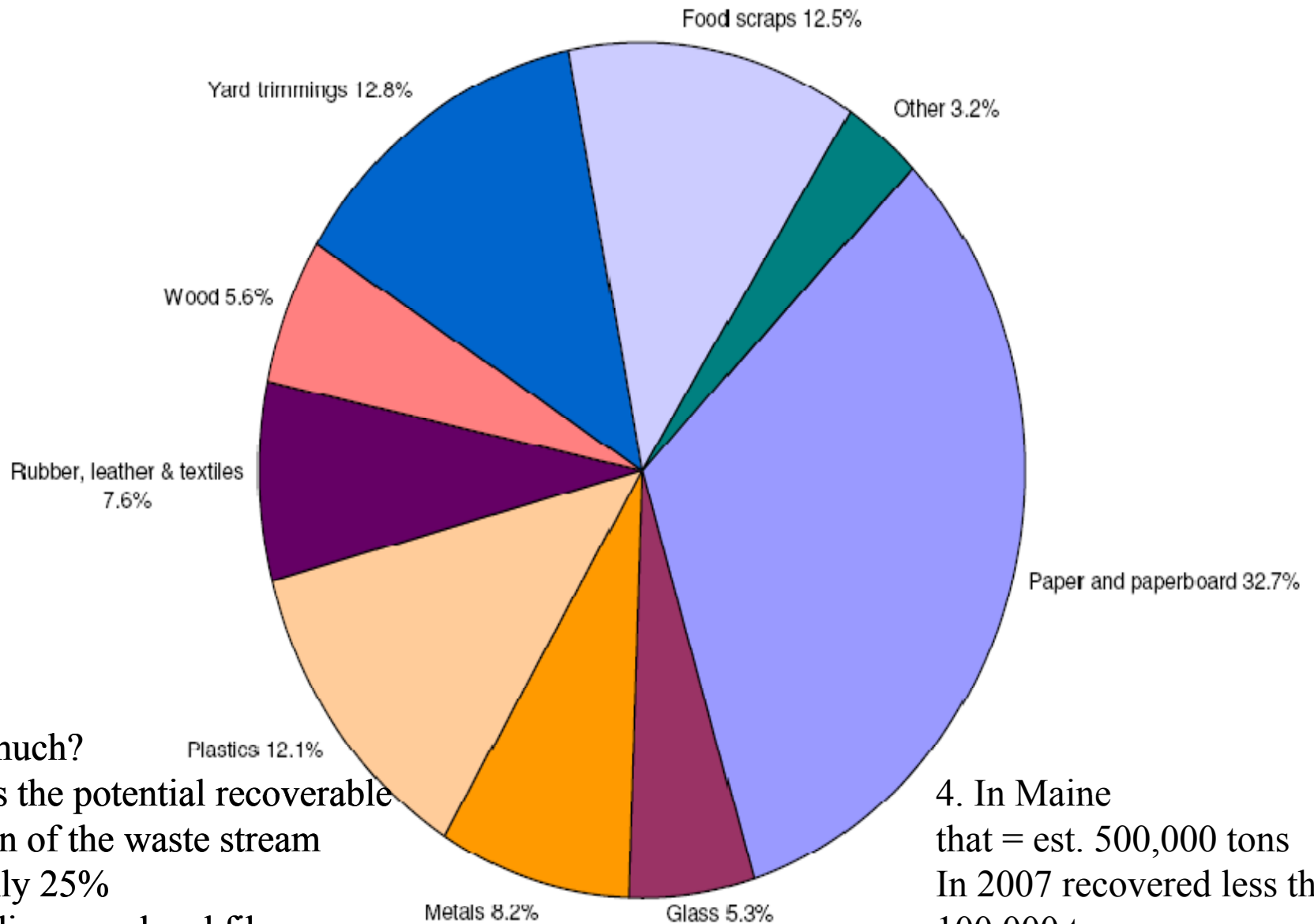
Personnel



The cost benefit
analysis
and the budget
process



Figure ES-3: Materials Generated in MSW, 2007
(254 Million tons before recycling) (EPA)



3. How much?
what is the potential recoverable
fraction of the waste stream
Roughly 25%
Excluding wood and fiber

4. In Maine
that = est. 500,000 tons
In 2007 recovered less than
100,000 tons

In Maine, The average person produces approx. 150-200lbs of food scraps per year

80% of restaurant “waste” is recoverable food scraps
Cafeterias, supermarkets, commercial and industrial food producers and processors
have similar percentages



What are you try to capture?



←Leaf and yard

How about Food→







Other materials ...
Less so....

From what sources?



← residents

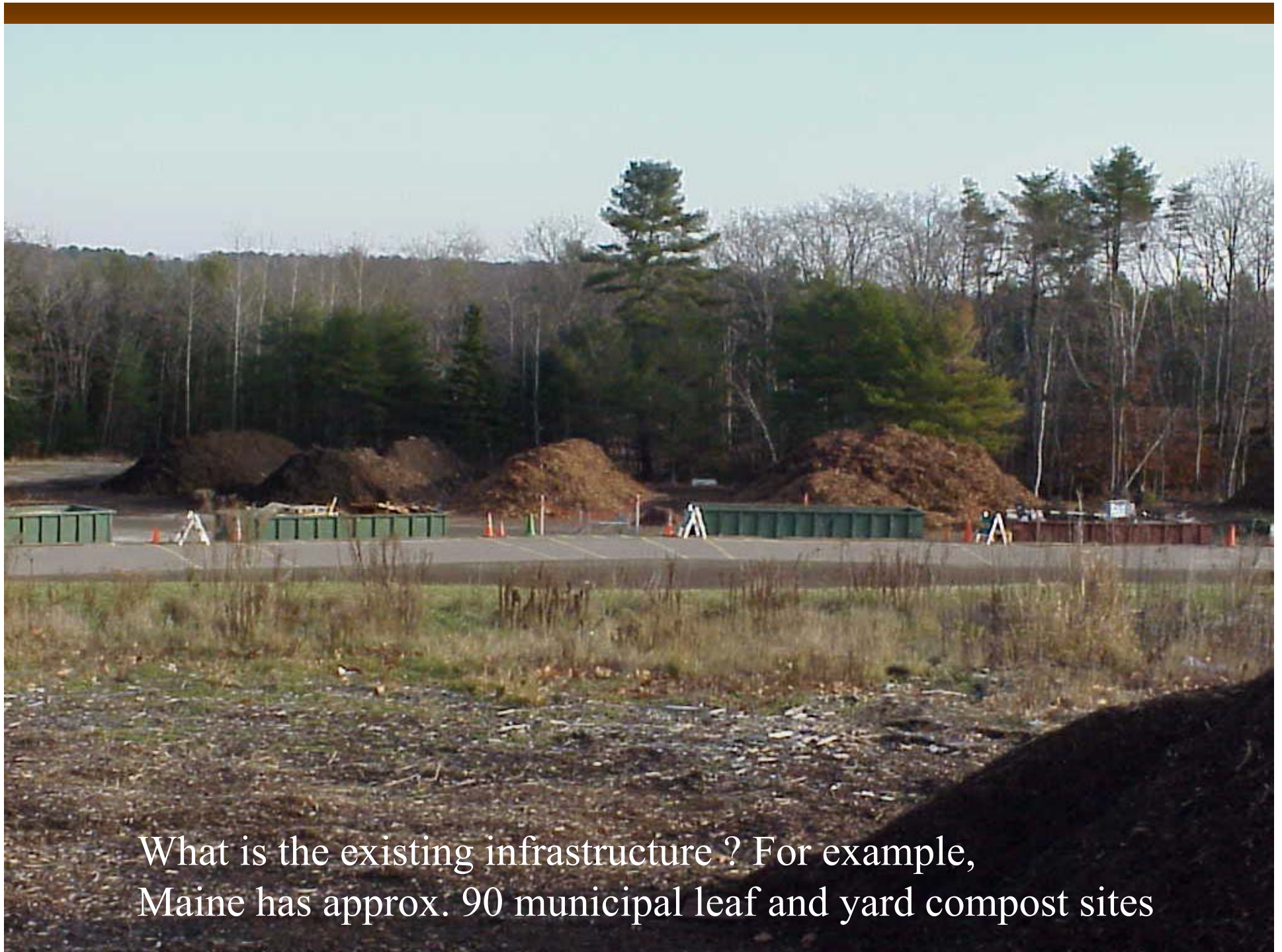
Commercial sources →



← Institutions -
cafeteria at UMO

Restaurants →



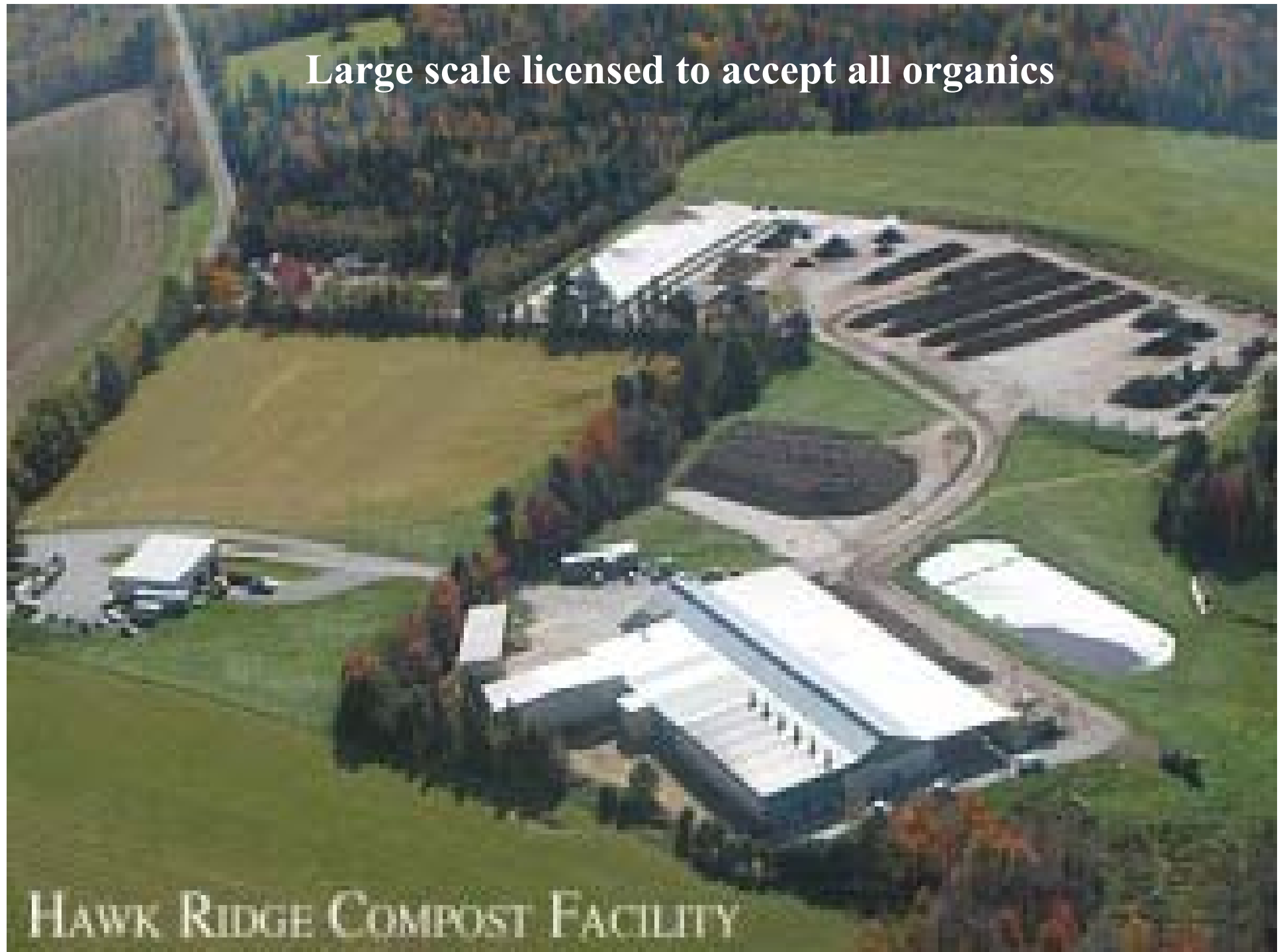


What is the existing infrastructure ? For example,
Maine has approx. 90 municipal leaf and yard compost sites

**And roughly 40 commercial sites
(produce more than they use)
of various sizes**



Large scale licensed to accept all organics



HAWK RIDGE COMPOST FACILITY



Intervale VT Site

Resource Recovery Planning- identifying and anticipating needs and building relationships between

The people who.....

- produce this “resource”.(Few food scrap generators have the“backyard” compost option)
- want to collect and transport it,
- want to compost and sell it
- have resource management goals &
- regulate the sites and activities (public sector)

What does each party need?

Haulers, as an example

- Haulers need collection efficiency



- Long term access to compost sites

Will this meet your transport needs



Or this



What to plan for

- Infrastructure- public sector or private sector proposals
- transportation
- lead up PE/PR
- Budget
- Community waste audit
- Managing the resource for the long term, because...
- Predictability- everyone needs it!
- Managing perceptions!

**For example: if people's perceptions
of organic recovery is this**



Emphasizing proper management to change
their view





Will this change their perception

Courtesy of John Majercak @Center for Ecological Technology



Courtesy of John Majercak @Center for Ecological Technology

What to encourage

- ✓ Community level waste to resource management plan
- ✓ Infrastructure/Operations development
- ✓ ordinance adoption- offers incentives/disincentives to encourage organics recovery

Conducting a Waste Audit available from DEP/SPO



1. Facility background
2. Current system, collection storage hauling
3. Facility walkthrough
4. Current waste reduction program
5. Waste sort
6. Potential reduction options
7. Economic and operational feasibility
8. In house training

WORKSHEET

1

Facility Background Information

Building Name/Number:
Building Owner or Management Company:
Name of Contact:
Telephone Number:

A Physical Layout and Organization

Building Location		
Number of Employees	Size (Area):	Number of Floors:
Is the Facility Equipped with <input type="checkbox"/> Freight Elevators <input type="checkbox"/> Loading Dock		
List any Other Companies Leasing Space in the Building:		
Company	Name of Contact	Telephone Number

B Building Departments and Functions

Department:
Name of Contact:
Telephone:
Location:
Major Functions:
Department:
Name of Contact:
Telep.:
Location:
Major Functions:

Food Waste Management Cost Calculator

The Food Waste Management Calculator estimates the cost competitiveness of alternatives to food waste disposal, including source reduction, donation, composting, and recycling of yellow grease. Specifically, the calculator (1) develops an alternative food waste management scenario based on: your waste profile, availability of diversion methods, and preferences; and (2) compares cost estimates for a disposal versus an alternative scenario. The Cost Calculator demonstrates that environmentally and socially responsible food waste management is cost-effective for many facilities and waste streams. The more you know about your current waste management costs, the more accurate the calculator's estimate will be, but default values are provided for many variables.

To use this Cost Calculator, navigate to the **Inputs** tab. There you will specify your type of organization (Grocery Store, Hospital, K-12 School, Restaurant, University, Prison, or Other Institutional Cafeteria); types and quantities of food waste; and availability of food recovery method(s). The Inputs tab has notes and instructions to guide you.

Based on your inputs and associated costs, the **Cost Calculator** tab displays the 1-, 3-, 6-, and 10-year costs associated with food waste disposal versus an alternative scenario developed for your facility.

The **Cost Data** tab provides default data including composting cost data and transportation costs. Users are encouraged to provide their own data for these costs if available. Cost data collected from sources dated before 2008 are adjusted for inflation.

The **Cost Graphs** tab graphically portrays the changes in cost over time between the baseline and alternative scenarios developed for your facility based on your inputs and Cost Calculator results.

The **Benefits** tab provides a summary of the environmental and other benefits associated with food waste diversion.

The **Composting Environmental Benefits** tab estimates changes in variety of environmental measures based on the alternative scenario developed for your facility. This tab only measures changes resulting from composting preferences selected on the Inputs tab. The tab also provides a link to EPA's WASTE Reduction Model (WARM), which estimates greenhouse gas (GHG) emissions of baseline and alternative waste management practices. You may enter the results of the Cost Calculator into WARM to estimate the change in GHGs from the baseline to the alternative scenario from composting.

The **Summary** tab provides brief review of the alternative food waste scenario based on your inputs and preferences, and summarizes the scenario's financial and environmental results compared to the baseline.

The **Resources** tab provides a summary of EPA's food waste hierarchy, as well as descriptive information and links to additional resources, including resources on the local availability of alternative food waste management methods.

The **Default Cost Data** tab is a static version of the Cost Data tab. Refer to it if you change default data in the Cost Data tab, and subsequently want to re-enter default values.

The **Lookup** tab contains calculator programming.

The **Waste Logbook** tab provides an example of a food waste tracking spreadsheet that you can use to better characterize the quantity and nature of your food waste. Tracking food waste over time can help identify areas in which your operations can reduce food waste and

The Nova Scotia food waste collection and composting example
One region's program

Valley Waste-Resource Management

- "Region 5" or the "Valley Region"
- Kings and Annapolis Counties
- 83,000 people
- Seven Towns and two County Municipalities
- Small Towns in a Rural Setting





Valley Waste continued...

- Two Transfer Stations
 - Operated by our staff
- Private Sector Contracts
 - Residential Collection
 - Recyclables Processing
 - Contracted Organics Processing
- Public Sector Contract
 - Landfill Disposal



Residential Collection





Residential Collection Basics in Nova Scotia

- Generally four streams
 - Organics
 - Recyclable Paper
 - Recyclable “Containers”
 - Residual Waste
- Generally Bi-Weekly Organics Collection
 - Alternating week collection
 - Garbage alternates with Organics
 - Single Pass Four Stream
 - Seasonal Weekly Organics Collection in some Urban areas
- Mostly Roadside, some Drop-off on Private Roads

Food Waste Collection





Residential Collection: Containers and Vehicles

Containers

- "Green Cart"
 - 65 Gallon (240 liter)
 - 35 Gallon (140 liter)
- 40 liter Container
- Plastic Bag
- Own container

Trucks

- Standard Rear Compactor with tipper
- Two Stream Side Compactor with tipper
- Four-Stream non-compacting truck with side mounted tipper
- General Purpose Trucks

Organics Collection in Halifax



Residential Containers



Small Apartment Storage



Cottage Area Storage



4-Stream Side Loader



Residential Collection Trucks



Side Loading 4-Stream Non-Compacting

Rear Compactor in Halifax





Commercial Collection Containers

- 65 Gallon wheeled cart
- Open Roll-off Containers
- Front-end fork truck “dumpsters”
- Compacting Roll-off Containers
- Plastic Bags
 - Compostable
 - Non-compostable
- Plastic Garbage Cans

Commercial Containers



Roll-Off Container



Commercial Containers: Bags





Commercial Collection Vehicles

- From “Self-Haul” to “Hand Bombers” to Large Commercial
 - Tow-behind trailers (simple, customized)
 - Half-tons
 - Cube Vans
 - Side loading 3 or 4 stream
 - Side Compactors
 - Rear Compactors
 - Front-end fork trucks
 - Roll-off trucks

Commercial Truck



Roll-Off Compactor

Commercial Truck



Restaurant Self-Haul

“Public Waste”

The Tragedy of the Commons



NSCAD Students' Design



Tim Hortons Public Bin

Public Waste: Special Events



Good Earth: Northridge Farms



Curbside Green Cart Material

Northridge Receiving Hall



Primary Composting Hall



Finished Compost

From This...



To This →



Valley Waste

2009-10 Costs Per Serviced Unit

Item	Cost	Serviced Units	Cost Per Year
Administration	445,960	38030	11.73
Management Centres	1,378,238	38030	36.24
Residential Collection	2,236,070	38030	58.80
Recycling Processing	442,000	38030	11.62
Organics Processing	882,600	38030	23.21
Residual Disposal & Transportation	1,919,600	38030	50.48
Residual Transportation		38030	0.00
Construction & Demolition Debris Processing	158,350	38030	4.16
Communications and Enforcement	435,038	38030	11.44
Capital Expenditures from Revenue	0	38030	0.00
Fiscal Services Financing	1,015,969	38030	26.71
Information Technology	54,075	38030	1.42
RRFB Approved Programs	102,100	38030	2.68
Transfer to Capital Reserves	0	38030	0.00
Occupational Health and Safety System Support	0	38030	0.00
Sub-Total	9,070,000	38030	238.50
Less Revenue	2,701,500	38030	71.04
Plus Deficit Funding			
Net Annual Cost	6,368,500		167.46



Nova Scotia's Waste Management Strategy: Results

Annual Provincial Disposal Rates 1989, 2008, 2015

Year	Kg/capita	lb/capita
1989	743	1635
2008	430	946
2015 (Target)	300	660



Conclusions

1. Technically there is no reason why food waste composting cannot be successful
2. It's good for the environment
3. People will participate and be proud of it
4. It takes time for people to adjust
5. It's about social change
6. It takes a combination of friendly persuasion, compliance promotion, and enforcement

The background of the slide is a solid dark orange color with a faint, stylized pattern of autumn leaves in a lighter shade of orange. The leaves are scattered across the frame, with some showing prominent veins.

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There is no waste just material without an identified market -waiting for markets